



WO 00/21998

PCT/IB99/01621

1

SEQUENCE LISTING

<110> Hoechst Marion Roussel

<120> MATURE PROTEIN HAVING ANTAGONIST ACTIVITY AGAINST BONE
MORPHOGENETIC PROTEIN.

<130> JH98K011 PCT SEQUENCES IN ENGLISH

<140>

<141>

<150> 10-288103

<151> 1998-10-09

<160> 7

<170> PatentIn Ver. 2.1

<210> 1

<211> 119

<212> PRT

<213> Human

<220>

<221> CHAIN

<222> (1)..(119)

<223> Mature MP52

<300>

<301> MAKISHIMA, Fusoa
TAKAMATSU, Hiroyuki
MIKI, Hideo
KAWAI, Shinji
KIMURA, Michio
MATSUMOTO, Tomoaki
KATSUURA, Mieko
ENOMOTO, Koichi

O 00/21998

PCT/IB99/01621

2

SATO, Yusuke

<302> Novel protein and process for producing the same.

<310> WO 96/33215

<312> 1996-1-0-24

<313> 1 TO 119

<400> 1

Pro Leu Ala Thr Arg Gln Gly Lys Arg Pro Ser Lys Asn Leu Lys Ala
1 5 10 15

Arg Cys Ser Arg Lys Ala Leu His Val Asn Phe Lys Asp Met Gly Trp
20 25 30

Asp Asp Trp Ile Ile Ala Pro Leu Glu Tyr Glu Ala Phe His Cys Glu
35 40 45

Gly Leu Cys Glu Phe Pro Leu Arg Ser His Leu Glu Pro Thr Asn His
50 55 60

Ala Val Ile Gln Thr Leu Met Asn Ser Met Asp Pro Glu Ser Thr Pro
65 70 75 80

Pro Thr Cys Cys Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe
85 90 95

Ile Asp Ser Ala Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val
100 105 110

Val Glu Ser Cys Gly Cys Arg
115

<210> 2

<211> 114

<212> PRT

<213> Human

WO 00/21998

PCT/IB99/01621

3

<220>

<221> CHAIN

<222> (1)..(114)

<223> Mature BMP-2

<300>

<301> WANG, Elizabeth A.

WOZNEY, John M.

ROSEN, Vicki A.

<302> Novel osteoinductive compositions.

<310> WO 88/00205

<312> 1988-01-14

<313> 1 TO 114

<400> 2

Gln Ala Lys His Lys Gln Arg Lys Arg Leu Lys Ser Ser Cys Lys Arg
1 5 10 15

His Pro Leu Tyr Val Asp Phe Ser Asp Val Gly Trp Asn Asp Trp Ile
20 25 30

Val Ala Pro Pro Gly Tyr His Ala Phe Tyr Cys His Gly Glu Cys Pro
35 40 45

Phe Pro Leu Ala Asp His Leu Asn Ser Thr Asn His Ala Ile Val Gln
50 55 60

Thr Leu Val Asn Ser Val Asn Ser Lys Ile Pro Lys Ala Cys Cys Val
65 70 75 80

Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp Glu Asn Glu
85 90 95

Lys Val Val Leu Lys Asn Tyr Gln Asp Met Val Val Glu Gly Cys Gly
100 105 110

Cys Arg

<210> 3
<211> 116
<212> PRT
<213> Human

<220>
<221> CHAIN
<222> (1)..(116)
<223> Mature BMP-4

<300>
<301> WOZNEY, John M.
ROSEN, Vicki
CELESTE, Anthony J.
MITSOCK, Lisa M.
WHITTERS, Matthew J.
KRIZ, Ronald W.
HEWICK, Rodney M.
WANG, Elizabeth A.
<302> Novel regulators of bone formation molecular clones
and activities.
<303> Science
<304> 242
<305> 4885
<306> 1528-1534
<307> 1988-12-16
<308> Genbank/M22490
<313> 1 TO 116

<400> 3
Ser Pro Lys His His Ser Gln Arg Ala Arg Lys Lys Asn Lys Asn Cys
1 5 10 15
Arg Arg His Ser Leu Tyr Val Asp Phe Ser Asp Val Gly Trp Asn Asp
20 25 30
Trp Ile Val Ala Pro Pro Gly Tyr Gln Ala Phe Tyr Cys His Gly Asp
35 40 45

WO 00/21998

PCT/IB99/01621

5

Cys Pro Phe Pro Leu Ala Asp His Leu Asn Ser Thr Asn His Ala Ile
50 55 60

Val Gln Thr Leu Val Asn Ser Val Asn Ser Ser Ile Pro Lys Ala Cys
65 70 75 80

Cys Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp Glu
85 90 95

Tyr Asp Lys Val Val Leu Lys Asn Tyr Gln Glu Met Val Val Glu Gly
100 105 110

Cys Gly Cys Arg
115

<210> 4

<211> 139

<212> PRT

<213> Human

<220>

<221> CHAIN

<222> (1)..(139)

<223> Mature BMP-7

<300>

<301> OZKAYNAK, Engin

RUEGER, David C.

DRIER, Eric A.

CORBETT, Clare

RIDGE, Richard J.

SAMPATH, Kuber T.

OPPERMANN, Hermann

<302> OP-1 cDNA encodes an osteogenic protein in the TGF-beta family.

WO 00/21998

PCT/IB99/01621

6

<303> EMBO J.
<304> 9
<305> 7
<306> 2085-2093
<307> 1990
<308> EMBL data library/X51801
<313> 1 TO 139

<400> 4

Ser Thr Gly Ser Lys Gln Arg Ser Gln Asn Arg Ser Lys Thr Pro Lys
1 5 10 15

Asn Gln Glu Ala Leu Arg Met Ala Asn Val Ala Glu Asn Ser Ser Ser
20 25 30

Asp Gln Arg Gln Ala Cys Lys Lys His Glu Leu Tyr Val Ser Phe Arg
35 40 45

Asp Leu Gly Trp Gln Asp Trp Ile Ile Ala Pro Glu Gly Tyr Ala Ala
50 55 60

Tyr Tyr Cys Glu Gly Glu Cys Ala Phe Pro Leu Asn Ser Tyr Met Asn
65 70 75 80

Ala Thr Asn His Ala Ile Val Gln Thr Leu Val His Phe Ile Asn Pro
85 90 95

Glu Thr Val Pro Lys Pro Cys Cys Ala Pro Thr Gln Leu Asn Ala Ile
100 105 110

Ser Val Leu Tyr Phe Asp Asp Ser Ser Asn Val Ile Leu Lys Lys Tyr
115 120 125

Arg Asn Met Val Val Arg Ala Cys Gly Cys His
130 135

<210> 5

<211> 119

<212> PRT

<213> Human

<220>

<221> CHAIN

<222> (1)..(119)

<223> Mature MP52 protein. Note : 30th, 71st, 74th and
111th Met are modified to Met sulfoxide.

<400> 5

Pro	Leu	Ala	Thr	Arg	Gln	Gly	Lys	Arg	Pro	Ser	Lys	Asn	Leu	Lys	Ala
1				5					10					15	

Arg	Cys	Ser	Arg	Lys	Ala	Leu	His	Val	Asn	Phe	Lys	Asp	Met	Gly	Trp
			20					25					30		

Asp	Asp	Trp	Ile	Ile	Ala	Pro	Leu	Glu	Tyr	Glu	Ala	Phe	His	Cys	Glu
		35					40					45			

Gly	Leu	Cys	Glu	Phe	Pro	Leu	Arg	Ser	His	Leu	Glu	Pro	Thr	Asn	His
	50					55					60				

Ala	Val	Ile	Gln	Thr	Leu	Met	Asn	Ser	Met	Asp	Pro	Glu	Ser	Thr	Pro
65					70					75					80

Pro	Thr	Cys	Cys	Val	Pro	Thr	Arg	Leu	Ser	Pro	Ile	Ser	Ile	Leu	Phe
				85					90					95	

Ile	Asp	Ser	Ala	Asn	Asn	Val	Val	Tyr	Lys	Gln	Tyr	Glu	Asp	Met	Val
			100					105					110		

Val	Glu	Ser	Cys	Gly	Cys	Arg
						115

WO 00/21998

PCT/IB99/01621

8

<210> 6
<211> 119
<212> PRT
<213> Human

<220>
<221> CHAIN
<222> (1)..(119)
<223> Mature MP52 protein. Note : 30th and/or 71st
and/or 74th and/or 111th met are modified to
s-carboxymethyl Met.

<400> 6

Pro Leu Ala Thr Arg Gln Gly Lys Arg Pro Ser Lys Asn Leu Lys Ala
1 5 10 15

Arg Cys Ser Arg Lys Ala Leu His Val Asn Phe Lys Asp Met Gly Trp
20 25 30

Asp Asp Trp Ile Ile Ala Pro Leu Glu Tyr Glu Ala Phe His Cys Glu
35 40 45

Gly Leu Cys Glu Phe Pro Leu Arg Ser His Leu Glu Pro Thr Asn His
50 55 60

Ala Val Ile Gln Thr Leu Met Asn Ser Met Asp Pro Glu Ser Thr Pro
65 70 75 80

Pro Thr Cys Cys Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe
85 90 95

Ile Asp Ser Ala Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val
100 105 110

Val Glu Ser Cys Gly Cys Arg
115

